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THE PLANT DISEASE REPORTER

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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SCLEROTIUM ROLFSII SEEDLING BLIGHT OF WALNUT, CATALPA, AND RUSSIAN OLIVE

Walter N. Ezekiel, Chris Nelson, Jr., and E. R. Mueller

The Indian Mound Nursery of the Texas Forest Service is located near Alto, Texas, in a region in which Sclerotium rolfsii is rather generally prevalent on tomatoes and other host plants. In the seedling beds of the nursery, this fungus has been found killing black walnut (Juglans nigra), catalpa (Catalpa speciosa), and Russian olive (Elaeagnus angustifolia). From each of these new hosts, S. rolfsii was readily recovered in pure culture but no inoculation experiments were carried out.

With these tree seedling hosts, S. rolfsii has attacked only occasional scattered groups of plants, during periods of high soil moisture while the seedlings were still tender. Little if any spread beyond the initial centers of infection has occurred during the 3 years covered by the observations, and at least under these conditions the fungus apparently was checked by progressive weather conditions and plant growth without need of treatment. However, the susceptibility of these and perhaps other forest tree seedlings to S. rolfsii will suggest the desirability, when locating nursery beds, of avoiding fields in which this fungus has caused much damage.

BLACK WALNUT. S. rolfsii blight on walnut seedlings in 1941 has already been described (PDR 25: 336-7. July 1941). In 1942, injury was noted first on April 18. By May 4, about 0.5% of the seedlings in the bed had been attacked. As in the previous year, only 1 to 3 seedlings were killed at any one location and no further spread occurred from the scattered initial centers of infection. In 1943, the walnut planting was located in an area of excessively acid soil. Even under these conditions, one plant killed by S. rolfsii was found on May 11.

Shortly after the disease was observed both in 1941 and 1942, soil fungicide drenches were applied around the growing walnut plants. DuBay Special Semesan (hydroxymercurichlorophenol 24% and hydroxymercuricresol 3.9%) was used in dilute solution at 8 ounces and mercuric chloride at 4 ounces per 1,000 sq. ft. of soil surface and caused no perceptible injury to the plants. Due either to the increasing age of the seedlings or the beginning of drier summer weather, there was no further spread in check or treated plots, so no information was obtained as to the possible value of the treatments.

CATALPA. Injury to catalpa seedlings, noted first in the seedbeds on May 11, 1942, appeared to be a typical post-emergence damping-off. The stems collapsed just above ground. A straw- to deep-brown, sharply constricted lesion extended to about 2 cm. above the crown. Cultures from the diseased seedlings yielded Sclerotium rolfsii.

RUSSIAN OLIVE. S. rolfsii blight in the Russian olive seedling beds was recorded first on May 16, 1942. About 25 plants had been killed, usually in small groups of 2 to 4 plants. Lesions on the crown were notably darkened, reddish-brown, extending 1-3 cm. up the stem, little if any constricted. On May 29, some additional specimens were examined. The deep-brown lesions were 2-3 cm. long and still only slightly constricted. A number of plants of both groups of specimens were cultured, and S. rolfsii secured in pure culture from almost all plants. Sclerotia

produced in culture were brown, spheric to slightly elongate, mostly about 1 mm. or less in diameter, with the largest about 1.4 to 1.5 mm. in diameter.

TEXAS AGRICULTURAL EXPERIMENT STATION AND TEXAS FOREST SERVICE

OBSERVATIONS ON THE OCCURRENCE OF MISTLETOE IN FLORIDA

Arthur S. Rhoads

With 2 exceptions which are indicated, the following observations of mistletoe, Phoradendron flavescens (Pursh) Nutt., were made during a trip through the central part of the State from September 27 to October 7.

Hosts of Mistletoe. Mistletoe was found on the following hosts:

On a large laurel oak (Quercus laurifolia Michx.) at Suwanee Gables (east of Old Town) on the eastern border of Dixie County, heavily infested (August); also attacking street and roadside trees at Melrose (Putnam County), Mount Plymouth, Sorrento, Tavares, and Umatilla (Lake County), Cocoa (Brevard County), and other places.

On bluejack oak (Quercus cinerea Michx.), occurring abundantly in woods along road between Summerfield and Weirsdale (Marion County), in woods along road between Weirsdale and Lady Lake (Marion and Lake Counties), and on a number of trees at Cocoa (Brevard County).

On turkey oak (Quercus laevis Walt.), occurring abundantly in woods along road between Weirsdale and Lady Lake (Marion and Lake Counties); also less abundantly in woods along road between Sorrento and Bay Ridge (Lake County).

On water oak (Quercus nigra L.), occurring on several forest and roadside trees at Melrose (Alachua and Putnam Counties).

On myrtle oak (Quercus myrtifolia Willd.), occurring abundantly on trees on scrub land at Altoona (Lake County) and Cocoa (Brevard County).

On Chapman oak (Quercus chapmanii Sarg.), noted on a single tree on scrub land at Altoona (Lake County).

On pecan (Carya pecan (Marsh.) Engl. & Graebn.), occurring on individual trees at Melrose (Putnam County) and Cocoa (Brevard County).

On mockernut hickory (Carya tomentosa (Lam.) Nutt.), occurring on 5 trees at the Devil's Millhopper, near Gainesville (Alachua County).

On black gum or tupelo (Nyssa sylvatica biflora (Walt.) Sarg.) in the tops of a few trees along the road east of Monticello in Jefferson County (September 6 to 12).

On Carolina cherry (Prunus caroliniana (Mill.) Ait.), occurring on single trees at Mount Plymouth (Lake County) and at Cocoa (Brevard County).

On camphor tree (Cinnamomum camphora (L.) Nees and Eberm.), occurring on single trees at Mount Plymouth (Lake County) and at Maitland (Orange County).

On black cherry (Prunus serotina Ehrh.) at Eustis, Tavares, and Umatilla (Lake County), and at Gainesville (Alachua County).

On American plum (Prunus americana Marsh.), occurring on a single tree at Altoona (Lake County).

On wild olive (Osmanthus americana (L.) Gray), occurring on a single tree at Altoona (Lake County).

On Elaeagnus (Elaeagnus ?umbellata Thunb.), occurring on a single bush at Oakland (Orange County).

On LeConte pear (Pyrus lecontei Rehd.), occurring on a single tree at Melrose (Alachusa County).

On flowering dogwood (Cornus florida L.), occurring on a single tree at Melrose (Alachua County).

On herculesclub pricklyash (Zanthoxylum clava-herculis L.), occurring on a single tree at Melrose (Alachua County).

Leaf Blight on Mistletoe. Leaf blight (Sphaeropsis visci (Westend.) Arch.) was noted on leaves of mistletoe on myrtle oak at Altoona (Lake County), the minute black pycnidia being clustered on the surfaces of the leaves to simulate sooty mold spots. This disease does not appear to have been collected previously in Florida, at least there is no record of it at the Experiment Station.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

FOREST TREE DISEASES IN OHIO

M. R. Harris

Several woodlots and conifer plantations in Hocking county were examined during the week ending October 11 to determine the extent of damage due to disease. The leaves on some species had fallen and on others had partially dropped. This gave a better opportunity to observe the boles and limbs for wood-rotting fungi. In these stands the native chestnut (Castanea dentata) is almost entirely killed out by the chestnut bark disease (Endothia parasitica). The mycelium of the fungus was readily found under the bark of several sprouts from old stumps. One small chestnut seedling was seen which appeared to be free of the disease, but usually seedlings and sprouts which thrive for a time are eventually killed by the fungus.

On the leaves of scarlet oak (Quercus coccinea) and black oak (Q. velutina) was found powdery mildew (Microsphaera alni) and the common tree mildew (Phyllactinia corylea). These fungi covered a large portion of the surface of some of the leaves and probably had a slight retarding effect on the growth of the tree. On maple (Acer rubrum) the tar spot fungus (Rhytisma acerinum) was more common than it has been for a number of years. On chestnut oak (Quercus prinus) was found a leaf spot caused by the fungus Venturia orbicula. A wood rot caused by Pleurotus ulmarius was found on one elm (Ulmus americana). Generally speaking the forest trees were, except for the chestnut, remarkably free of pathogenic organisms of economic importance.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

TREE DISEASES OBSERVED IN WISCONSIN

Edwin E. Honey

Inspection for Forest Tree Diseases on hardwood sites selected at random, for the most part on County Forests in Marinette, Oneida, Iron, Douglas, Bayfield, and Washburn Counties was made during this two week

period. In these counties samplings were made on from 1/10 to 2/5 acre areas. Soil samples were taken and the site index determined, according to the Univ. of Minn. Agr. Exp. Sta. Tech. Bull. 60 (1929) in the case of all aspen areas examined. Populus tremuloides and P. grandidentata are both included here under the term aspen.

The incidence of infection of Hypoxylon pruinatum on aspen was recorded on ten of these samplings. This pathogen causes heavy losses to aspen throughout the range of the hosts in Wisconsin although less infection appears on the large-tooth species of which 1 out of 27 or about 4% were found infected. Some of the results of this study are given in Tables 1, 2 and 3. The percentage of affected trees, in the cases of these samplings, ranged from 3.8 to 49.6 with an average of 22.2. In table 2 it appears that, in general, with trees of smaller diameters the percentage of infection was higher. Infection was found much higher in areas where the aspen was smaller in diameter and height and present in greater concentration than in the cases of larger trees occurring more scattered. It is believed that this may result from the dropping out of the smaller infected trees leaving the dominant but less commonly infected trees. This appears to be the situation in the older stands where commercial cutting was being carried on.

Table 1.--Incidence of Hypoxylon Canker on Aspen*

Sampling No.	County	Size in Square Chains	Average Age of Dominant Trees (Years)	Average Height Dominant Trees (Feet)	Site Index	Total No. Examined Trees	No. Affected Trees Living	No. Affected Trees Killed	% Trees Affected	Estimated Average No. Diseased Trees per Acre
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
2	Marinette	1	33.6	37.8	50	112	11	14	22.3	250
4*	Marinette	1	31.8	45.5	60	81	6	19	30.8	250
6	Oneida	2	26.1	44.1	65	194	19	50	35.6	345
7*	Oneida	3	42.7	51.7	60	253	25	19	21.3	180
9	Iron	2	43.3	72.6	80	78	1	2	3.8	15
10*	Iron	2	37.3	50.2	60	135	30	37	49.6	335
11	Douglas	2	31.3	46.6	60	78	5	7	15.4	60
12	Bayfield	4	42.5	55.5	60	125	10	5	12.0	38
14*	Washburn	2	43.8	53.5	60	52	1	2	5.7	15
15*	Washburn	1	32.0	51.0	80	99	3	2	5.0	50
Total	6	20	-	-	-	1207	111	157	22.2	134

*Populus tremuloides only was present on sampling without asterisk; some P. grandidentata also present on sampling with asterisk.

Table 2.--Incident of Hypoxylon Canker in Relation to Diameter

Items	Diameter (D.B.H.) in Inches													Totals & Average
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Total Trees Examined	119	140	184	183	165	171	113	66	29	17	14	4	2	1207
Number Trees Affected	5	27	53	62	44	41	22	11	3	0	0	0	0	268
Per Cent Trees Affected	4.2	19.3	28.8	33.9	26.6	23.9	19.4	16.6	10.3	0.0	0.0	0.0	0.0	22.2

Table 3.--Relation of Hypoxylon Canker to Site

Site Index	Total Trees Examined	Number of Affected Trees		Per Cent of Trees Affected
		Living	Killed	
(a)	(b)	(c)	(d)	(e)
50	112	11	14	22.3
60	724	77	89	22.9
65	194	19	50	35.6
80	177	4	4	4.5
	1207	111	157	22.2

Besides Hypoxylon canker other troubles on aspen were noted. From 1 to 3% of rough bark was observed in some areas; butt rot from 1 to 20% and heart rot from 7 to 15% were observed on over half the areas. Most aspen with butt and heart rot had no fruiting bodies evident but the most common one present was Fomes igniarius. Polyporus adustus was fruiting on the base of dead aspen in Oneida County; Polystictus pargamenus, P. versicolor, P. hirsutus, Daedalea confragosa, and a species of Stereum were common on dead standing or fallen aspen. Butt rot and heart rot appear frequently to follow injury from fire scars and frost cracks as well as through stubs. Frost ribs were quite abundant on aspen.

A small proportion of other hardwood species were present on the above aspen sites. Samplings were made also on certain sugar maple-hardwood sites where sugar maple averaged 73.0% of the hardwoods present and ironwood and blue beech were the common subordinate species.

The following notes give a resumé of the diseases and decay organisms recorded in the above named counties:

On Sugar Maple: Butt and heart rots together occurred on from 10 to 85% of the trees. Sporophores were present on only a few of these affected trees, the most common of which were those of Fomes igniarius and

F. connatus. Polystictus versicolor was observed fruiting occasionally in old butt fire scars. A species of Stereum was also fruiting on certain trees affected with heart rot. Rough bark was observed on up to 6% of the sugar maple on poor sites. Nectria canker was recorded up to 2% and Eutypella canker on up to 3.5% of the trees examined in Oneida and Bayfield Counties. Fomes applanatus, especially on dead-standing or fallen maple, was found in all the above named counties as well as near Laona in Forest County. F. fomentarius was also observed on sugar maple in Forest County. Fallen leaves revealed the presence of a light infection of the tar spot caused by Rhytisma acerinum in Oneida County.

On Yellow and White Birch: Butt and heart rots were found in up to 16% of the birch examined in the above counties. Sporophores of Fomes fomentarius were the most common fruiting observed on these affected trees although F. igniarius was found also on yellow birch in Marinette and Oneida Counties and white birch in Oneida County. Polyporus betulinus was common on trunks of dead birch in all counties visited.

On Basswood: Butt and heart rots up to 10 percent were observed. No sporophores were recorded on these affected trees.

On White Oak: Up to 50 percent of the white oak were recorded as having heart and butt rot. Fomes igniarius was found fruiting on a few of these affected trees.

On Ironwood: Up to 6% of the trees in one sampling showed heart and butt rot. Fomes igniarius was found fruiting on one affected tree.

On Willow: Daedalea confragosa on standing decayed willow was found in Oneida and Iron Counties.

On Ash: Heart rot was evidenced by the abundant fruiting of Polyporus sulphureus on a living lawn tree in Dane County.

On Hemlock: Fomes pinicola was observed fruiting on fallen decaying logs in Forest County and Ganoderma lucidum on stumps in all counties visited.

On Jack Pine: Freshly formed galls caused by Cronartium quercuum were observed at several locations, particularly in Eau Claire County where very young trees were being deformed. Earlier in the season the telial stage of this rust was found fruiting abundantly on the leaves of oak in Portage, Wood, and Adams Counties.

A trouble associated with spittle bug, causing the dying back and death of Jack pine, was found to be very severe and spreading rapidly in Marinette and nearby Forest and Oconto, Florence and Oneida Counties. Similar injury was observed on red pine. This trouble has been under observation in Wisconsin since 1941. Its cause has not been determined but its damage and spread is of alarming proportions.

On Black Spruce: A small percent of trees with witches'-brooms caused by the mistletoe Arceuthobium pusillum were observed in swamps in Forest and Oneida Counties.

EMERGENCY PLANT DISEASE PREVENTION PROJECT, 2 weeks ending November 6.

REPORTS ON CORN DISEASES

CORN DISEASES IN OHIO: In the vicinity of Columbus a number of corn fields were inspected for ear rots. Only traces of Fusarium moniliforme, Gibberella zeae, and Nigrospora oryzae (Basisporium gallarum) were found. Losses due to ear rots over the southern half of Ohio are not a factor in corn production this year. As corn neared maturity the rainfall was low and there has been little rain since. As a result, corn stalks either in the shock or standing dried out rather completely with environmental conditions very unfavorable to the development of various corn ear and stalk rotting fungi. About 30% of corn was not cut in Ohio and 70% was either cut and shocked or put into silos. About half of the standing corn has been harvested, much of it by mechanical pickers. Of the shocked corn only a third has been husked up to the present time, --M. R. Harris, Emergency Plant Disease Prevention Project. November 1 to 5.

CORN DISEASES IN INDIANA: During the week ending November 6, field corn was examined for ear and stalk rots in Tippecanoe, Clinton, Tipton, Madison, Delaware, Randolph, Wayne, Fayette, Rush, Decatur, Jennings, Jackson, and Bartholomew Counties in central Indiana.

In the 20 fields of corn examined between 11 and 54% (average 31%) of the stalks were infected severely with Diplodia zeae. Diplodia ear rot was found in 16% of the fields on from 1 to 3% of the ears. Fusarium ear rot (Fusarium moniliforme) occurred in 83% of the fields, between 1 and 9% (average 3%) of the ears being infected slightly. Between 1 and 4% of the ears were infected with Gibberella zeae in 40% of the fields. In 2 fields 1% of the ears were rotted with a white sterile fungus. In 2 fields 1 and 2% of the ears were affected with Hormodendrum rot. Nigrospora ear rot (Nigrospora sphaerica) was found in 3 fields; from 1 to 7% of the ears were affected. Penicillium ear rot was found in 22% of the fields on from 1 to 6% of the ears. Stalks infected with Ustilago zeae [U. maydis] occurred in 66% of the fields; between a trace and 3% (average 0.7%) of the stalks were infected. In 1 field 1% of ear smut was found.

In 3 fields 25 to 30% of the ears contained chaffy grain which appeared to be caused by Diplodia stalk rot or Helminthosporium leaf blight or both.

During the week ending November 13, field corn in the northern half of Indiana was examined for diseases. Thirty-one fields were sampled and 100 plants in each field were examined. Corn in this area was well matured in most cases and was being harvested. Most of the corn that was frozen when immature, during the second week in October, had dried satisfactorily with little spoilage.

Plants infected severely with Diplodia stalk rot were found in all of the fields except one. Between none and 65% (average 24%) of the stalks were infected severely with Diplodia zeae. In 13% of the fields 1 to 2% of the ears were infected severely with Diplodia zeae. In 84% of the fields from 1 to 7% (average 2.6%) of the ears were infected slightly with Fusarium moniliforme. Gibberella ear rot (Gibberella zeae) occurred in 1/3 of the fields and between 1 and 3% (average 1.7%) of the ears were infected. Nigrospora ear rot (Nigrospora sphaerica) occurred on 1% of the

ears in 10% of the fields. Smut (Ustilago zeae /U. maydis/ was found in 55% of the fields and between a trace and 2% (average 0.3%) of the plants were infected. One percent of the ears in 2 fields were smutted. In 1/5 of the fields 1% of the ears were infected slightly with Penicillium. A trace of Hormodendrum ear rot was found in 2 fields.-- R. C. Baines, Emergency Plant Disease Prevention Project.

TOBACCO DISEASES IN VIRGINIA IN 1943

Edward K. Vaughan

The beginning of the tobacco season was marked by a severe and unusual outbreak of blue mold (Peronospora tabacina Adam), the effect of which, as pointed out by Jenkins (PDR 27: 227-228; 298-299, 1943) was felt not only in the plant bed, but throughout the growing season, resulting in losses in late planted crops estimated at 20 to 50% of the crop, or from $50.00 to $150.00 per acre.

Granville wilt (Bacteriam solanacearum E.F.S.), caused alarm among growers in sections of Mecklenburg, Lunenburg, and Brunswick Counties. In these sections the disease is known to be present on practically every farm, and in many instances caused 50 to 70% loss of plants by the beginning of the pulling season. Losses ranging from traces to as much as 50% of the plants also occurred on many farms in Amelia, Dinwiddie, Nottoway, Charlotte, Franklin, Halifax, Pittsylvania, Henry, and Patrick Counties. The disease appears to be spreading extensively in the old belt or flue-cured tobacco area and was also seen on dark fire-cured tobacco, but has not as yet been reported from either the burley or the air-cured areas. Perhaps 1 or 2% of the total crop was lost as a result of this disease.

Black shank (Phytophthora parasitica Br. de H. var. nicotianae Tucker), which had hitherto been found on only a few properties in Virginia has previously been reported as causing increased losses during 1943 (PDR 27: 272-273. 1943). In surveys conducted by S. B. Fenne, W. A. Jenkins, R. G. Henderson, and the author, the presence of black shank was definitely established on 8 farms in Halifax County, 2 in Charlotte County, 4 in Mecklenburg County, 3 in Franklin County, and 14 in Pittsylvania County. The wide distribution of these known centers of infestation and statements by the farm owners indicate that the disease was brought into the State from North Carolina on several occasions. However, from the number of growers who have black shank infestations on their farms and who insist that no plants or cultivating implements have been brought in from outside, it would seem that the disease may readily be spread from one locality to another by other means. The presence of conidiophores on the surface of infected leaves near the ground line during periods of rainy weather has often been noted and wind-borne conidia may be responsible for the otherwise unaccountable spread of the disease. Losses to individual growers were as high as 50 to 60% of the crop, but losses in the State as a whole still are negligible.

The pattern of development of black shank appeared to be so uniform in most cases that it was possible in many cases to tell the age of the field infestation by the appearance of the disease in the field. First year

infestations usually cause the death of only a few scattered plants and in most cases are overlooked by the growers. In the second season, local areas of the field are severely damaged, causing concern to the grower, and slight crop losses result. In the third season, the disease is generally apparent throughout the field and the crop is unprofitable. In the fourth season, a new piece of ground is used and the grower finds that in his cultivating activities he has already spread the black shank organism to this and other parts of his farm. By this time the grower has become sufficiently alarmed to call in his County Agent or write to the Agricultural College for advice.

One unusual development was noted during the summer. A field near Rosa, Halifax County, adjacent to one in which a heavy infestation was recorded in 1939 and 1942, was visited on August 2. Instead of the expected heavy infection only 3 or 4 infected plants could be found. Since these few infected plants were in the lowest part of the field, it is possible that the severe drouth prevented more extensive infections from taking place.

Sore shin (Rhizoctonia solani Kühn) was present in poorly drained sections of many fields, and a few affected plants were found distributed over practically all fields, but losses were negligible.

Black root rot (Thielaviopsis basicola (Berk) Ferraris) did not cause as much damage as in previous seasons. While this no doubt was due in part to the more extensive use of resistant varieties, the late planting and the unusually warm weather which prevailed during the month of June undoubtedly were of much greater importance, since the disease caused relatively little damage to dark fire-cured tobacco, all varieties of which are susceptible.

Rootknot (Heterodera marioni (Cornu) Goodey) was generally present in those localities where it had been observed in previous seasons. Observations during the past season confirm previous indications that the disease is spreading, particularly in certain sections of Pittsylvania and Halifax Counties. Its association with Granville wilt is known to have concealed its presence on several occasions. Last season the drouth was an added complication, and was so severe in certain areas that the rootknot infestation was overlooked.

Mosaic (virus) was present in most fields, but comparatively few fields suffered severely from the disease. No instance of severe mosaic damage was reported from fields where the recommended control practices had been observed, although in one case actual counts in a field of burley tobacco showed 90% of the plants to be severely affected and mosaic "burning" of the ripening leaves caused almost complete loss of the crop. For the State as a whole, crop losses probably did not amount to more than a fraction of 1%.

Ringspot (virus) was much less common than mosaic, but occurred in fields scattered throughout the tobacco growing area. It was seen most frequently in dark fire-cured tobacco, probably because of the close association of this crop with clover and lespedeza.

Brown root rot (cause undetermined) was observed on several farms in Halifax County. Unquestionably this disease has been confused with black root rot (and perhaps to some extent with wilt) in previous years.

Drouth injury in late summer undoubtedly caused greater losses than all pathogenic diseases combined, although as pointed out by Jenkins (loc. cit.) these losses were to a very considerable extent indirectly brought about by the sustained epiphytotic of blue mold. In some fields losses due to drouth ranged as high as 50%, with a reduction in yield for the State of perhaps 10%.
VIRGINIA AGRICULTURAL EXTENSION DIVISION

REPORTS ON DISEASES OF SUGAR BEETS

LEAF SPOT ON SUGAR BEET IN INDIANA: In 2 fields near Fort Wayne approximately 1/3 of the leaves were infected severely with Cercospora beticola. --R. C. Baines, Emergency Plant Disease Prevention Project. September 27 to October 2.

SUGAR BEET DISEASES IN COLORADO: During the week ending September 18 traces of leaf spot (Cercospora beticola) were found in many sugar beet fields in Delta, Mesa and Montrose Counties. Only a few plants were found infected with the curly-top virus.

During the week ending October 9 sugar beets were being harvested. Several fields in Larimer and Weld Counties showed severe burning due to leaf spot. In general, leaf spot will cause only a slight amount of damage in reduction in yield and sugar content. Root rot (Verticillium albo-atrum) was found in several fields in the vicinity of Ault in Weld County. The virus diseases savoy and vein mosaic were each found in a few fields in Larimer County. --E. W. Bodine, Emergency Plant Disease Prevention Project.

DISEASES OF SUGAR BEETS IN SOUTHWESTERN UTAH: From October 20 to 23 a trip was made into Washington County in the extreme southwestern part of the State. Sugar beets (seed crop) in the 3 plantings observed were generally free from disease. In one field 10% of the young plants had been destroyed in low, wet areas of the field, and stunted seedlings were found bearing black root lesions. In another field a single seedling was found affected with curly-top (virus). In Dr. H. L. Blood's tomato breeding plot, where a curly-top susceptible strain of sugar beets was planted, nearly 100% of the plants were affected with curly-top. In this planting a single plant was found affected with mosaic (virus). --Seth Barton Locke, Emergency Plant Disease Prevention Project.

SMUDGE AND OTHER FUNGUS BLEMISHES ON ONION SETS IMPORTED INTO CALIFORNIA

William C. Snyder

Every year white and brown onion sets (Allium cepa L.) grown in other states are imported in carload lots into California for fall planting,

and frequently, owing to a quarantine in California against onion smudge (Colletotrichum circinans (Berk.) Vogl.), a number of these carlots are refused at their destination. The findings made from an examination of samples from 8 carlots of onion sets consigned to this State are reported here.

In table 1 it is seen that the smudge fungus, Colletotrichum circinans, was found causing smudge of the bulb scales in only 1 set of 1 white lot (in sample No. 5), whereas smudge-like symptoms caused by other fungi were present on a number of sets of all lots. Fungi found associated with these other blemishes included Aspergillus, Macrosporium, Cladosporium, Botrytis, Phoma, etc. It is well known that blemishes on dried onions may be caused by a variety of fungi which develop more or less saprophytically upon the dead outer scales in the presence of moisture, and that such blemishes often resemble closely onion smudge.[1/] However, microscopic examination of the samples showed also that the smudge fungus was present in very small lesions on weathered tips of the necks of several sets in all but 2 lots, namely, No. 6 and No. 7 from Oregon, as recorded in table 1.

Table 1.--Findings on samples from 8 carlots of onion sets shipped into California

Lot No.	Color of sets	Source of sets	True smudge found on bulb part	True smudge found on tip of neck	Other fungus blemishes*	No. of sets examined
1	Brown	Illinois	0	6	42	59
2	"	"	0	2	47	51
3	"	"	0	3	48	63
4	"	"	0	2	24	42
5	White	"	1	1	15	25
6	Brown	Oregon	0	0	-	-
7	White	"	0	0	37	85
8	Brown	Unknown	0	5	28	57

* Due to Aspergillus, Macrosporium, Cladosporium, Botrytis, Phoma, etc., but not Colletotrichum.

It is evident that the detection of onion smudge on sets shipped in from other States is beset with practical difficulties, and requires a detailed microscopic examination perhaps of every set in the test sample. In the case of the brown sets, which from the practical standpoint are resistant[2/], the detection of the fungus is made particularly difficult where the dried tips have been knocked off in the handling of the sets, for this is the only point on the colored sets susceptible to invasion. Moreover, it is possible for such sets to be carrying the smudge fungus even though visible signs of the fungus, e.g. acervuli and setae, may be

1/ Walker, J. C. Onion smudge. Journ. Agr. Res. 20: 685-722. 1921.

2/ Walker, J. C. Disease resistance to onion smudge. Journ. Agr. Res. 24: 1019-1040. 1923.

lacking.

Smudge has not been observed on onions of any kind grown in California.[3/] This may be an indication of the efficacy of the quarantine, or perhaps of the failure of the smudge fungus to become established under California conditions.

DIVISION OF PLANT PATHOLOGY, UNIVERSITY OF CALIFORNIA, BERKELEY, CALIFORNIA

VEGETABLE DISEASE SURVEY IN THE BELLE GLADE AREA OF SOUTHERN FLORIDA

R. A. Hyre

This survey was made November 9 to 13 on the muck soils in the immediate vicinity of Belle Glade. This area has been dry and cool recently and a mild disease situation was found. The rainfall up to November 1 at the Everglades Experiment Station this year has been 13.5 inches less than the average of about 53.7 inches for the same period.

Celery -- Over 400 beds, up to 300 feet in length in 4 localities and about 340 acres of celery in the field, in 5 localities, were seen. The celery varied from just transplanted up to about 10 inches in height.

Cercospora apii, early blight, was light but general on the older bed plantings and was found on all field plantings, usually in traces to scattered light amounts, but in one block of about 3 acres there were up to 18 lesions per leaf.

Heterodera marioni, root knot, was found to render several beds unusable after 2 pickings at one location.

Growers' reports would indicate that damping-off occurrence was less than usual this year, amounting to only a few percent in the early seedings where estimated.

Cabbage -- A 50 x 100 foot bed of Golden Acre was disked up before any plants were pulled because of downy mildew (Peronospora parasitica). Mildew was scattered throughout another 100 x 100 foot bed. This bed had been sprayed 7 times with bordeaux. The loss for seed alone was $125. At a second location mildew was scattered lightly throughout 17 beds 4 x 300 feet in size. On 200 acres of Copenhagen and Golden Acre cabbage in the field (transplanting to the field in progress) mildew was present generally on the lower leaves. The new growth was free of mildew. Dr. G. R. Townsend stated that reports indicated that mildew was widespread this year.

Escarole: No diseases were seen on 50 acres of young escarole plants.

Bean -- Some 675 acres of beans in all stages of growth but with the majority being harvested were seen. Leaf roller and stalk borer injury were the chief troubles found. No diseases were found except scattered spots of root knot in a few fields and Rhizoctonia rot following the stalk borer.

Four percent of bald head (non-par.) was present in one 20-acre field.

3/ Smith, R. E. Diseases of truck crops. California Agr. Ext. Circ. 119. 1940.

Pea -- No diseases were seen in 61 acres of 2 to 3 inch tall peas.

Potato -- Some 650 acres of Red Bliss potatoes were seen. The plants were 12 to 15 inches tall.
A trace of early blight (Alternaria solani) was present in 300 acres.
A trace of mosaic was found.

Corn -- Puccinia sorghi, rust, was seen in several instances on the corn planted for wind breaks in the bean fields.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

DISEASES OF GLASS HOUSE VEGETABLES IN OHIO

M. R. Harris

A survey of plant diseases in the vegetable forcing industry of Ohio was started during the week ending November 13. In the state of Ohio there are approximately 675 acres under glass planted to vegetable crops. A number of houses near Cincinnati were inspected for the presence of plant diseases.

Lettuce -- In 2 greenhouses visited a type of tip burning was found that was not the result of infection by a pathogenic organism. A careful appraisal of the 2 situations indicates that overwatering together with poor light conditions are the 2 factors contirbuting most to the condition. In the house most severely damaged a heavy clay soil with considerable partially decayed vegetable matter was also a factor. In 2 houses lettuce drop (Sclerotinia sclerotiorum) was killing a few scattered plants and may spread to others. The presence of this disease, according to the growers, is due to certain portions of the soil being improperly or incompletely steam-sterilized.

Tomatoes -- In a large glasshouse west of Cincinnati a crop of tomatoes was being harvested. The soil in all of the greenhouses except one had been steam-sterilized through drain tile in the soil 1 foot deep and 20 inches apart. No evidence of any soil-borne disease was seen in any of these houses. In one house where steam sterilization was not possible because no tile had been laid, the soil had been treated with a 1% formaldehyde solution applied at the rate of 1 gal. per sq. ft. of surface. The results were not satisfactory. Almost all of the vines showed varying degrees of damage from Fusarium wilt (Fusarium bulbigenum var. lycopersici). A few vines had been killed entirely and showed in addition to Fusarium a heavy infection by the rootknot nematode (Heterodera marioni). The crop in this house will be reduced by 60%. No other diseases were observed except mosaic (tobacco virus) which did not seem to be doing any appreciable damage.

Cucumbers -- In one house, a crop of cucumbers was mature and the vines were declining in vigor. No disease except what appeared to be Fusarium was observed. However the symptoms were largely concealed by

damage from white fly, aphis, and thrips.

Radishes -- A crop of radishes in one greenhouse was about half-grown and showed no evidence of plant disease.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

VEGETABLE DISEASES IN THE COLMA TRUCK CROP REGION OF CALIFORNIA

Horace L. Barnett

During the week ending November 6 some time was spent with Dr. M. W. Gardner in the extensive truck crop region near Colma in San Mateo County. Owing to the great variety of crops and the abundance of plant diseases (mostly of a minor nature) only a few truck farms were visited. The additional fact that there is so much difference in environmental conditions and in the severity of plant diseases between areas only a few miles apart makes it very difficult to arrive at any accurate estimate of damage or loss for the entire district. Therefore, the estimates of loss given in this report are based on observations in very limited areas.

A summary of the plant diseases observed in the Colma district are given below:

Crucifers -- This is the main crop growing here at this time of the year. A great number of varieties were present.

Ring Spot (Mycosphaerella brassicicola) was one of the most common diseases found but it was causing very little loss. The infections were confined mostly to the older leaves indicating that the disease was probably present in the plant beds and that very little or no spread occurred in the field. Ring Spot was found on the following varieties of Crucifers: Cabbage, Green Sprouting Broccoli, Cauliflower, Venetian Broccoli, Kale, Braschette and Brussels Sprouts.

Black Ring Virus was also common and doing slight damage. The varieties diseased were Cabbage, Purple Cabbage, Green Sprouting Broccoli, Cauliflower, Kale and Brussels Sprouts.

Downy Mildew (Peronospora parasitica) was commonly found but doing only slight damage since it occurred mostly on the older leaves. The varieties diseased were Cabbage, Green Sprouting Broccoli, Cauliflower, Venetian Broccoli, Braschette, Turnip and Brussels Sprouts.

Alternaria Leaf Spot (Alternaria brassicae) [? A. circinans; see PDR 27 (16): 317. Sept. 1] was found on Turnip, Cabbage, Cauliflower and Chinese Cabbage.

Phytophthora Root Rot (Phytophthora megasperma) was found only on Green Sprouting Broccoli. Several dead plants were found in one field but the total damage was not great.

Powdery Mildew (Erysiphe polygoni) was severe on one small field of kale.

Cercosporella Leaf Spot (probably Cercosporella albomaculans) was prevalent on 2 varieties of Chinese Cabbage. This disease in combination with the Alternaria Leaf Spot on the same plants was causing some damage

to the small areas seen.

Mosaic diseases (virus) were seen in Green Sprouting Broccoli, Cauliflower, Venetian Broccoli and Turnip.

Squash -- Powdery Mildew (Erysiphe cichoracearum) was common but doing only slight damage to the younger plantings. More damage had been done to the older plantings.

Mosaic (Beetle-transmitted Virus) was observed in only a few scattered infected plants.

Potato -- Late Blight (Phytophthora infestans) was found on a large number of volunteer plants scattered through the fields. Since these diseased plants will live through the winter they may serve as an important source of infection next spring. Solanum sarachoides, a common weed in these fields, was also found to be infected with P. infestans.

Tomato -- Three small abandoned patches of tomatoes in this region showed a heavy infection of Late Blight (Phytophthora infestans), both on the leaves and on the fruit. Since few tomatoes are grown in this district the total loss here was negligible.

Early Blight (Alternaria solani) was present in the tomatoes seen and had caused slight damage in these patches.

Beet -- Downy Mildew (Peronospora schachtii) was severe in one small field of garden beets. Approximately 20% of the plants were infected and had formed no root.

Rust (Uromyces betae) was not common on beet and doing little damage.

Cercospora Leaf Spot (Cercospora beticola) was not common on beet.

Chard -- Rust (Uromyces betae) was common on both the green and the red varieties and severe on some plants, causing some loss.

Cercospora Leaf Spot (Cercospora beticola) was more common on Chard than on beet but causing only slight damage.

Although Chard was growing near beets infected with Downy Mildew none of the disease was found on Chard.

Carrot -- Alternaria Blight (Alternaria carotae) was doing some damage in one heavily affected portion of one small field.

Cercospora Blight (Cercospora carotae) was more common than Alternaria Blight but causing little loss this late in the season.

Aster Yellows (Virus) was present in a few scattered plants.

Chives -- Only one small patch of Chives was seen. A high percentage of the plants were infected with Downy Mildew (Peronospora destructor). Apparently this is the first report of Downy Mildew on Chives in California.

Celeriac -- Late Blight (Septoria apii or S. apii-graveolentis) was prevalent and causing blight of leaves, especially in the older plantings.

Aster Yellows (Virus) was seen on a few scattered diseased plants.

Lettuce -- Gray-Mold Rot (Botrytis cinerea) was present on a few scattered plants.

Downy Mildew (Bremia lactucae) was prevalent but occurred mostly on the older leaves and thus causing little loss.

A leaf spot of undetermined origin was causing considerable damage in one small field.

Spinach -- Downy Mildew (Peronospora effusa) occurred only in traces and was doing little or no damage.

Only a trace of Mosaic (virus) was seen.

Endive -- Rust (Puccinia hieracii) was doing considerable damage to some plants in one small field.

Parsnip -- Aster Yellows (Virus) was seen in a few scattered plants.

Salsify -- White Rust (Albugo tragopogonis) was prevalent but probably doing only slight damage.

Aster Yellows (Virus) occurred on only a few scattered diseased plants.

Globe Artichoke (Cynara scolymus)-Leaf Spot (Ramularia cynarae)was present on the older leaves with little or no damage.

Cardoon (Cynara cardunculus)--A Leaf Spot (Undet.) was present on the older leaves. It appeared to be similar to the Ramularia Leaf Spot of Artichoke but the fungus could not be found.

Only the conidial stage of a Powdery Mildew (Undet.) was present. It was doing no damage.

Virus Diseases in Ornamentals -- It was interesting to note that the Asters growing near the vegetable plots were heavily infected with Aster Yellows Virus and moderately so with the Spotted Wilt Virus.

Nasturtiums growing in this area were infected with the Spotted Wilt virus. These plants will live over winter carrying the virus.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

BRIEF NOTES ON PLANT DISEASES

SOFT ROT AND LATE BLIGHT ROT ON POTATOES IN STORAGE IN SOUTH DAKOTA: In one large warehouse in Codington County, one bin of Triumphs had to be graded and marketed because of soft rot. At least 2 more bins in the same house contained many rotting tubers, and shipping of these potatoes would have to be done soon. The storage conditions were unfavorable, the bins being overloaded and the ventilation poor. While late blight (Phytophthora infestans)-infected tubers could be found without difficulty, the breakdown was primarily due to soft rot developing because of poor storage.

Storage cellars on farms in Codington County did not contain any severely rotted tubers. Tubers infected with late blight were present in a few bins, but the infected tubers were drying up and no serious storage loss

is to be expected.

In Deuel County, tubers infected with late blight were not uncommon, from 10 to 15% of the Ohios being infected. Triumphs and Cobblers had much less late blight infection, not exceeding 1%. Storage conditions in this county were generally good, most of the potatoes being in farm cellars that were not overloaded and where ventilation was adequate. Soft rot had not developed in any of the cellars and it did not appear probable that loss in storage would exceed that from late blight alone. --Ian W. Tervet, Emergency Plant Disease Prevention Project. Week ending November 7.

STORAGE ROTS OF SWEETPOTATO IN LOUISIANA: In the northeastern section of the State including West Carroll, Union, Lincoln, Jackson and Franklin Parishes, sweet potato acreages were greatly expanded for production of sweet potatoes for dehydration for food purposes. Storage houses were visited in the different sections and diseases were noted on the potatoes coming in for storage and on those potatoes that had been stored for some time. At Oak Grove one storage house with a capacity of approximately 300,000 crates, had received and stored 70,000 crates of potatoes. Crates of potatoes that had been stored from 3 to 4 weeks were examined. Some crates had from 2 to 3% loss caused by Rhizopus soft rot (Rhizopus sp.). Estimated loss on potatoes that had been stored for some time was between 1 and 2%. Other diseases noted were a trace of soil rot lesions, scurf, and black rot (Actinomyces ipomoeae, Monilochaetes infuscans, Ceratostomella fimbriata). At Winnsboro 17,000 crates and at Jonesboro 6000 crates of potatoes had been stored. At all storage houses soft rot was causing the most damage. Some lots of potatoes had 2 to 3% loss while others showed only a trace of soft rot. Many farmers were growing potatoes for sale for the first time and were not familiar with handling of the potatoes at digging time, as evidenced by the mechanical bruising that will probably lead to fairly heavy losses from soft rot and Diplodia rot; however, only a trace of Diplodia was found. At Winnsboro and Jonesboro traces of scurf and soil rot were observed, but black rot was not found. --L. H. Person, Emergency Plant Disease Prevention Project. November 1 to 6.

IRON DEFICIENCY AND OTHER TROUBLES OF FRUIT TREES IN SOUTHWESTERN UTAH: From October 20 to 23 a trip was made into Washington County in the extreme southwestern part of Utah.

In one apple planting 44% of the trees showed chlorosis, due to iron deficiency, at the tips of the shoots.

From 6 to 9% of the peach trees in 3 plantings showed from a trace to 15% of the foliage chlorotic due to iron deficiency. In one planting 95% of the trees bore sun scald cankers on the upper sides of all of the main branches. These cankers ranged from 6 to 18 inches in length and from 2 to 3 inches in width. The trees had been pruned to a very open habit.

In one planting of plums 88% of the trees exhibited iron deficiency chlorosis at the ends of the shoots.

Two plantings of pears were examined. From 75 to 100% of the foliage

on 86% of the trees showed iron deficiency chlorosis in one planting. Chlorosis did not occur in the other planting. A trace of arsenical injury was found on the leaves of one planting.

In one sweet cherry planting 25% of the trees were chlorotic from iron deficiency, while 50% of the trees were dead or partly dead because of root drowning. These trees were planted along an irrigation ditch. In a nursery planting near Hurricane containing approximately 400 trees, 4.5% of them were found to be affected with crinkle (undet.). --Seth Barton Locke, Emergency Plant Disease Prevention Project.

OCTOBER WEATHER

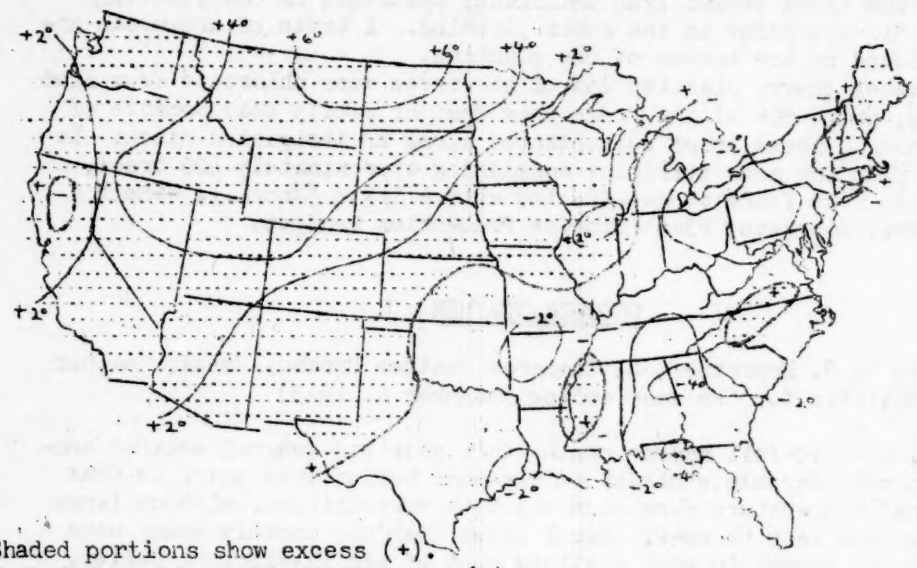
(From the U. S. Department of Commerce Weather Bureau, Weekly Weather and Crop Bulletin for the week ending November 2, 1943)

October, the mid-fall season month, this year had general weather conditions in considerable contrast to the same period last year, in that the seasonal temperature recession was much more uniform, without large variations from week to week. Map I shows that the monthly means were slightly below normal in most sections east of the Mississippi Valley, about normal in a rather wide belt extending from the Lake region southwestward, and decidedly above normal over a large northwestern section of the country. Last year variations during the month were decidedly large, but the monthly means were above normal practically everywhere.

This year in about one-fourth of the total area of the United States, the Northwest, the average temperatures ranged from 4° to 7° above normal, while in the other three-fourths they were from approximately normal to 2° or 3° below. Over the eastern half of the country, widespread killing frost did not extend as far south as in an average year. In fact, some localities as far north as southern Michigan had not experienced killing frost up to the close of the month.

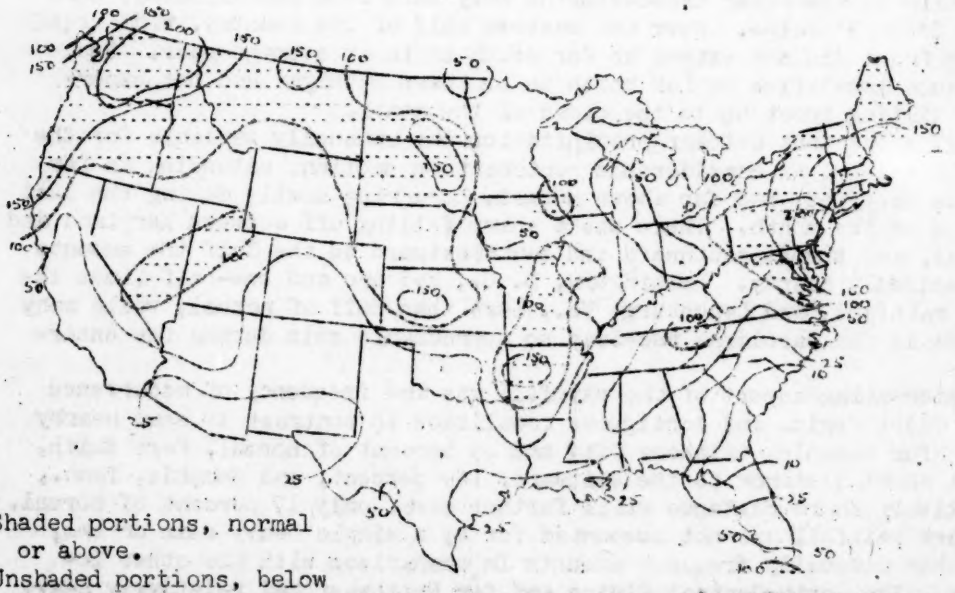
Map II shows that October precipitation was unusually variable for the mid-fall season. A considerable northeastern section, extending as far south as Maryland, had far above normal, occurring mostly during the last few days of the month. There was a sharp falling off between Maryland and Virginia, and thence southward and southwestward to the Gulf the amounts were decidedly scanty. Washington, D. C., had one and one-half times the normal rainfall, and Lynchburg, Va., less than half of normal, while many stations in the Carolinas received no appreciable rain during the entire month.

An interesting aspect of the rainfall was the frequency of occurrence in the Ozark region and contiguous localities in contrast to some nearby areas. For example, Oklahoma City had 45 percent of normal, Fort Smith, Ark., a short distance to the eastward, 169 percent, and Memphis, Tenn., a relatively short distance still farther east, only 17 percent of normal. The Ozark rainfall was not accounted for by a single heavy rain or two, but rather unusually frequent amounts in comparison with the other locations. The North-Central Plains and far Northwest had relatively heavy precipitation, while a considerable area in the Southwest had practically no rain.



Shaded portions show excess (+).
Unshaded portions show deficiency (-).
Lines show amount of excess or deficiency.

Map. I - Departure of Mean Temperature from the Normal, October 1943



Shaded portions, normal or above.
Unshaded portions, below normal.
Lines showing percentage of normal.

Map II - Percent of Normal Precipitation, October 1943.